

WE CLAIM

1. A tread of a vehicle tire comprising:  
a tread layer of rubber material on a tire carcass, the tread layer including pattern blocks separated from each other by wider grooves, and at least in part of these pattern blocks fine slits substantially narrower than the grooves, each of the slits comprising within an area of the pattern block at least one bend or at least one end, wherein at least part of the pattern blocks comprises surface tear points between at least two adjacent slits;  
each of the surface tear points formed by webs located between an end of at least a first slit and at least a second slit or its end, or located between a bend of the first slit and the second slit or its bend; and  
nubs inside the pattern blocks defined by the adjacent slits and respective webs;  
wherein a width of the webs is at most five times a width of the slits.

2. The tread according to claim 1, wherein at least the two adjacent slits are both of a first slit type which includes two bends which open in substantially opposite directions, and at least both slits are interlaced in a row in uniform positions forming webs of a first type so that principle directions of intermediate sections between the two bends of the slits are either parallel or gradually changing their direction in a fan-like manner.

3. The tread according to claim 2, wherein the principal directions of the intermediate sections form an angle of deflection in relation to one of a constant or local row direction, the angle of deflection being between 30° and 90°.

4. The tread according to claim 1, wherein at least the two adjacent slits are both of a second slit type which includes one bend, and at least both slits are located in pairs along a row, the slits of the slit pairs being interlaced and mirror-like and forming webs of a first type.

5. The tread according to claim 1, wherein at least the two adjacent slits are both of a third slit type which includes two bends which open principally in the same direction, and at least both slits are alternately interlaced and mirror-like in a row forming webs of a first type so that average directions of intermediate sections between two bend points in the at least two adjacent slits are parallel with each other, and with a constant row direction of the row.

6. The tread according to claim 1, wherein at least the two adjacent slits are both of a second slit type which includes one bend, the slits located in pairs along a row, the slits in the slit pairs being opposed and mirror-like forming webs of a second type or webs of a third type, and the ends of the slits of the successive slit pairs are separated in the row by a space a size of a web width and form web combinations or webs of the second type.

7. The tread according to claim 1, wherein at least the two adjacent slits are both of a fourth slit type which are present in pairs and which includes three or more bends which open, alternately and substantially in opposite directions, the slits in the slit pairs being opposed and mirror-like so that the bends separated by a distance of a web width form webs of a third type which are located in a row respective to a principal direction of the slits.

8. The tread according to claim 1, wherein at least the first slit is of a second slit type which includes one bend point opening towards the second slit or a slit of a fourth slit type which includes three or more bend points opening, alternately and substantially in opposite directions, and at least the second slit is a slit of a fifth slit type which is principally straight, the ends of the slit of the second type, or the bends of the slit of the fourth type are arranged at a distance equal to a web width from the slit of the fifth type forming a row of webs of a first type or a fourth type, respectively, along the slit of the fifth type.

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9. The tread according to claim 1, wherein at least the two adjacent slits both include four principally straight slits of a fifth slit type having first ends separated by a distance of a web width and forming first webs of a second type, the slits of the fifth type being arranged in pairs along a row and having second ends that extend away from the first webs of the second type and are separated by a distance of a web width from each other, the second ends forming webs that are of the second type, and in the row, the first webs of the second type of the successive slit pairs are separated by a web width and form web combinations.

10 The tread according to claim 1, wherein the webs that form the surface tear points are located on the convex side the bends.

11. The tread according to claim 1, wherein the bends of the slits are in the form of one an angle or an arc, the angle formed by sides of the slit, the sides continuing as straight or curved sections of the slit, the arch continuing with one of a straight section, a convex section, or a curved section.

12. The tread according to claim 11, wherein the angle is at least 60° and at most 120°, or the angle is between 80° and 100°.

13. The tread according to claim 11, wherein the arc extends in a single configuration to one of a first curvature of at least 150°, and at most 210°, or between 170° and 190°, the arc continuing as sections of unchanged radius of curvature, or a second curvature of at least 60°, and at most 120°, or between 80° and 100°, the arc continuing as substantially straight sections, or the arc continues in sections with a third curvature that is located between the second and first curvatures, the sections having a radius of curvature that is larger than the radius of curvature of the arc.

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14. The tread according to claim 11, wherein a radius of curvature of the angle is at most three times the width of the slit.

5 15. The tread according to claim 1, wherein the slits extend, opening to one edge or two opposite edges of the pattern block, the edges of the pattern block being parallel or at most at an angle of 45° to a circumferential direction of the tire.

10 16. The tread according to claim 1, wherein the pattern block includes at least five nubs having substantial length and width in a circumferential direction of the tire and in a lateral direction of the tread, the nubs being present in pattern blocks on shoulder areas of the tire and in pattern block towards a middle of the tire.

15 17. The tread according to claim 2, wherein the pattern block includes one or more rows having a row direction transverse to a circumferential direction of the tire, and with the row direction forming a row angle between 90° and 45° in relation to the circumferential direction of the tire.

20 18. The tread according to claim 1, wherein the width of the webs is one of at most four times the width of the slit, or at most two times the width of the slit, or substantially equal to the width of the slit.

25 19. The tread according to claim 1, wherein a thickness of the webs is one of at most three times the width of the slit, or at least half of the width of the slit, or between .8 and 1.5 times the width of the slit.

20. The tread according to claim 1, wherein a thickness of the web and the width of the web are dimensioned according to the rubber material or materials of the tread layer so that, as the tire is in used during driving, the web tears into a depth calculated from an outer surface of the tread, the tear depth being substantially

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smaller than a slit depth, or the tear depth is at least .5 mm and at most 1.5 mm, or at most 1.0 mm.

21. The tread according to claim 18, wherein the width of the webs is at most 1.5  
5 mm and at least .3 mm, or the width of the web is between .5 mm and 1.0 mm, and a  
thickness of the web is at most 1.3 mm and at least .2 mm, or the thickness of the  
web is between .4 mm and .9 mm.

22. The tread according to claim 1, wherein the webs that form surface tear  
10 points connect the adjacent nubs starting from a bottom of the slits with a measure  
decreasing as the tire wears out, the measure being smaller than a prevailing slit  
depth that decreases during the wearing out of the tire on each wear level.

23. A tread of a vehicle tire, comprising:  
15 a tread layer on a tire carcass, the tread layer including pattern blocks separated from each other by wider grooves, and at least in part of these pattern blocks fine slits substantially narrower than the grooves, each of the slits comprising within an area of the pattern block at least one bend or at least one end, wherein at least part of the pattern blocks comprises surface tear points between at least two  
20 adjacent slits;

each of the surface tear points formed by webs located between an end of at least a first slit and at least a second slit or its end, or located between a bend of the first slit and the second slit or its bend; and

nubs inside the pattern blocks defined by the adjacent slits and respective webs, the webs connecting adjacent nubs from bottoms of the slits, a height of the nubs decreasing as the tire wears out, the height being smaller than a prevailing depth of the slit that decreases during wearing out of the tire.

24. The tread according to claim 23, wherein at least the two adjacent slits are  
30 both of a first slit type which includes two bends which open in substantially

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opposite directions, and at least both slits are interlaced in a row in uniform positions forming webs of a first type.

25. The tread according to claim 23, wherein at least the two adjacent slits are  
5 both of a second slit type which includes one bend, and at least both slits are located  
in pairs along a row, the slits of the slit pairs being interlaced and mirror-like and  
forming webs of a first type.

26. The tread according to claim 23, wherein at least the two adjacent slits are  
10 both of a third slit type which includes two bends which open principally in the  
same direction, and at least both slits are alternately interlaced and mirror-like in a  
row forming webs of a first type.

27. The tread according to claim 23, wherein at least the two adjacent slits are  
15 both of a second slit type which includes one bend, the slits located in pairs along a  
row, the slits in the slit pairs being opposed and mirror-like forming webs of a  
second type or webs of a third type, and the ends of the slits of the successive slit  
pairs are separated in the row by a space a size of a web width and form web  
combinations or webs of the second type.

28. The tread according to claim 23, wherein at least the two adjacent slits are both of a fourth slit type which are present in pairs and which includes three or more bends which open, alternately and substantially in opposite directions, the slits in the slit pairs being opposed and mirror-like so that the bends separated by a distance of a web width form webs of a third type which are located in a row respective to a principal direction of the slits.

29. The tread according to claim 23, wherein at least the first slit is of a second  
slit type which includes one bend point opening towards the second slit or a slit of a  
30 fourth slit type which includes three or more bend points opening, alternately and

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substantially in opposite directions, and at least the second slit is a slit of a fifth slit type which is principally straight, the ends of the slit of the second type, or the bends of the slit of the fourth type are arranged at a distance equal to a web width from the slit of the fifth type forming a row of webs of a first type or a fourth type, respectively, along the slit of the fifth type.

30. The tread according to claim 23, wherein at least the two adjacent slits both include four principally straight slits of a fifth slit type having first ends separated by a distance of a web width and forming first webs of a second type, the slits of the fifth type being arranged in pairs along a row and having second ends that extend away from the first webs of the second type and are separated by a distance of a web width from each other, the second ends forming webs that are of the second type, and in the row, the first webs of the second type of the successive slit pairs are separated by a web width and form web combinations.

31. The tread according to claim 23, wherein a width of the web is at most four times a width of the slit or the width of the web is at most two times the width of the slit.

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